

## **EMERGENCY ROOM CROWDING: A MARKER OF HOSPITAL HEALTH**

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### **ABSTRACT**

Emergency room (ER) crowding has become a widespread problem in hospitals across the United States. Two main reasons can be cited. First, emergency medicine is the only specialty in the “House of Medicine” that has a federal mandate to provide care to any patients requesting treatment. Second, primary care providers are in short supply, forcing sick people to seek medical care in ERs. Once seen as an “ER problem,” crowding has become more appropriately recognized as a “hospital problem,” related to factors beyond the doors of the ER. This realization has led many regulating agencies to launch corrective attempts, some of which have actually been effective. Now, the lack of ER crowding is considered a measure of the success of a hospital or system. This review considers the complex causative factors that contribute to ER crowding and explores corrective measures that may prove helpful in alleviating this paralyzing condition.

### **THE PROBLEM**

America’s emergency rooms (ERs) are in crisis. Crowding, delays, and diversions have increased to epidemic proportions. In the United States healthcare system, ER visits account for 11% of outpatient encounters, 28% of acute care visits, and 50% of hospital admissions. By default, ERs have become, as noted in the 2006 Institute of Medicine report, “the safety net of the safety net” (1). For many Americans, it is now a place of last and first resort.

Hospital-based emergency care is the only medical treatment to which Americans have a legal right, regardless of their ability to pay (2). The Emergency Medical Treatment and Active Labor Act, better known as EMTALA, was passed by Congress in 1986. It requires

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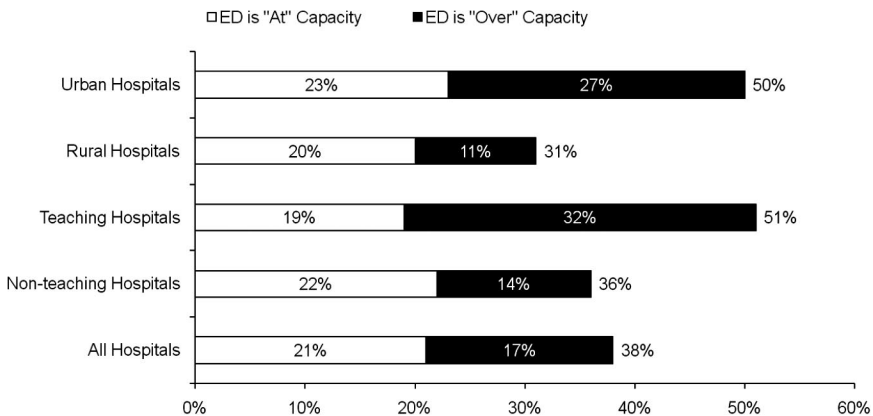
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hospitals and ambulance services to provide care to anyone needing emergency healthcare treatment regardless of citizenship, legal status, or ability to pay. The legislation sets forth no provisions for reimbursement.

Although most hospital types are affected, the crowding problem is particularly severe in urban and teaching hospitals. A 2010 survey by the American Hospital Association revealed that more than 50% of surveyed urban and teaching hospitals had ERs that were “at” or “over” capacity (Figure 1) (3).

Compounding the problem is the alarming trend of a decreasing number of ERs and an increasing numbers of ER visits. Between 1990 and 2009, the number hospital-based ERs in non-rural areas decreased by 27% (from 2446 to 1779). During that same time frame, the number of ER visits increased 44% (from 88 million to 127 million visits). This increase is not merely due to population increases during that time: the utilization rate actually increased 18%, from 351 visits/1000 population in 1990 to 415 visits/1000 population in 2009 (Figure 2) (4).

The Institute of Medicine report titled “Hospital-Based Emergency Care at the Breaking Point” evaluated the impact of ER crowding. It documented that ambulance diversion was occurring roughly one-half million times per year in the United States, about once every minute. It reported that it is not uncommon for patients to be “boarded” in the ER for 48 hours or more until an inpatient bed becomes available. It also noted that many critical urban centers have no excess capacity to manage a natural disaster or terror event.



Source: American Hospital Association 2010 Rapid Response Survey: Telling the Hospital Story

FIG. 1. Percent of Hospitals Reporting Emergency Department Capacity Issues by Type of Hospital, March 2010.

Year	ED Visits (millions)	ED Visits per 1,000	Emergency Departments <sup>(1)</sup>
1991	88.5	351	5,108
1992	90.8	356	5,035
1993	92.6	359	4,998
1994	90.5	348	4,960
1995	94.7	360	4,923
1996	93.1	351	4,884
1997	92.8	347	4,813
1998	94.8	351	4,771
1999	99.5	365	4,679
2000	103.1	366	4,650
2001	106.0	372	4,621
2002	110.0	382	4,620
2003	111.0	382	4,570
2004	112.6	383	4,595
2005	114.8	388	4,611
2006	118.4	395	4,587
2007	120.8	401	4,565
2008	123.0	405	4,613
2009	127.3	415	4,594

Source: Avalere Health analysis of American Hospital Association Annual Survey data, 2009, for community hospitals.  
US Census Bureau: National and State Population Estimates, July 1, 2009.

FIG. 2. Emergency Department Visits, Emergency Department Visits per 1,000, and Number of Emergency Departments, 1991–2009.

Seemingly, the explanation for this crowding phenomenon revolves around finances. Common thinking reasons that elective admissions reimburse better than poorly funded ER admissions and elective surgeries pay better than trauma in addition to being more predictable. From the hospital administrator’s perspective, boarding patients in the ER keeps in-patient nursing staff happy and the hospital gets two admissions for the price of one. But recent studies have begun to dispel this myth and show that an ER-supporting strategy is profitable (5).

WHO IS AFFECTED?

ER crowding appears to affect certain populations disproportionately. A survey by the Center for Healthcare Research and Transformation revealed that “uninsured” patients are three times more likely to use ERs and are sicker than their “insured” counterparts (6). The Agency for Healthcare Research and Quality (AHRQ) found that 60% of rural ER visits are made by “poor” patients (7), and a 2011 study noted that hospitals serving “low-income” patients have the highest rates of patients leaving the ER without being seen by a physician (8).

A study by Pitts et al (9) revealed that, although ERs employ only 4% of the active physician workforce, they account for 38% of all acute care visits in the country. In contrast, medical specialists account for 60% of the active physician workforce but manage 43% of acute visits. Considering low-income and uninsured populations, the same study found that ERs account for 51% of all acute visits by patients covered by

Medicaid or the State Children's Health Insurance Program (SCHIP) and 64% of all acute visits by individuals with no insurance (Figure 3).

People with mental illness constitute another segment of the population seeking care in ERs. An article in the *Los Angeles Times* (10) chronicled the plight of "mentally disturbed" patients in California as they seek care in overburdened ERs, a phenomenon that is occurring across the country.

### THE CONSEQUENCES

What are the consequences of ER crowding? Is any harm being done? In a 2009 report by the Government Accounting Office (GAO), investigators found that ER patients triaged to the "sickest" category were waiting more than twice the recommended time limits before being seen by a physician (11). Study results published in *Academic Emergency Medicine* linked ER crowding to increased in-hospital mortality rates and delays in timely treatments for conditions such as acute pain and pneumonia (12). A population study out of Canada estimated that reducing ER length of stay by 1 hour could decrease the number of deaths in high-risk patients by 6.5% and by almost 13% in lower-risk patients (13). Resident education is also negatively affected. A study at the authors' institution found that residents saw fewer patients and performed fewer procedures during peak times of ER crowding (14).

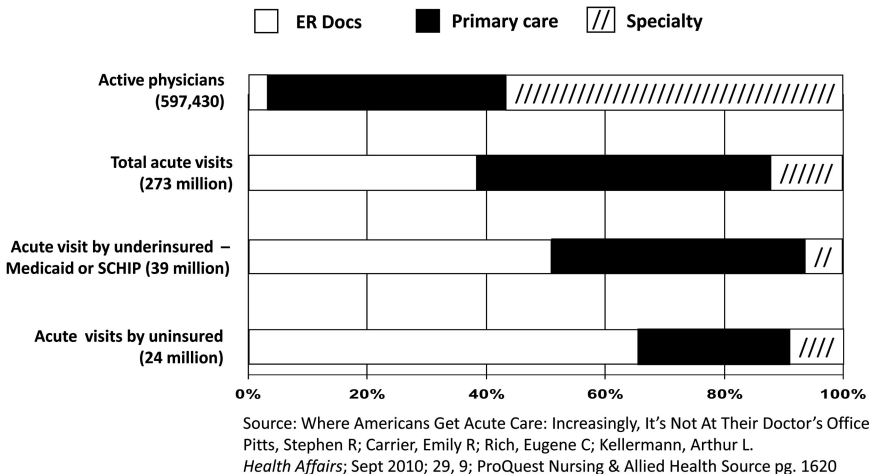


FIG. 3. ERs Provide a Disproportionate Share of Acute Care to the Poor & Uninsured.

## **SOLUTIONS ATTEMPTED**

A number of solutions have been attempted to resolve ER crowding. Free-standing ERs not physically connected to hospitals are being used by some hospital systems to off-load some of the ER burden from the main facility. Other institutions have redirected patients with less-urgent conditions to alternative healthcare providers, fast tracks, urgent care centers, and primary care clinics. In our institution, we instituted an electronic health record system to allow more precise tracking of resources and opened a transfer center to coordinate the flow of patient transfers into the facility, lessening this burden on the ER. We also realigned staffing during peak patient volume times to better match resources with needs. Others have streamlined processes and testing on admitted in-patients to shorten their hospital stays, thereby freeing up in-patient beds for “boarders” in the ER. All have realized that there are no “quick fixes” and that the problem of ER crowding is multi-factorial.

## **A SUCCESS STORY: ONE SYSTEM'S VICTORY**

In 2003, the Detroit Medical Center was managing 6 ERs that cared for 290,000 patients every year. The system had an annual budget of \$1.5 billion and audited losses of \$115 million in the previous year. Because of unsustainable losses, the chief executive officer (CEO) threatened to close two of the six hospitals and resigned at the end of the year. A new CEO was hired and expressed a vision of patient satisfaction driving every process of the hospital, beginning with the ER. This was the origin of the “29-minute” initiative. The CEO met with all hospital presidents in the system and informed them that the “29-minute” initiative was one of his primary objectives for 2004. Chief operating officers were linked in leadership with physician specialists-in-chief as they identified the team of personnel at each facility to accomplish the objective. The system would guarantee that patients presenting to the ER would be evaluated by a physician within 29 minutes after arrival. If the guarantee was not met, the patient would be sent a letter of apology from the CEO, along with a voucher for two tickets to a local sporting event, theater, or museum.

The initiative immediately became a hospital-wide plan with system-wide buy-in. Regular meetings were held to ensure that resources were aligned with the mission. Where possible, parallel processing of patients replaced serial processing so that multiple tasks could be accomplished simultaneously instead of sequentially. Additionally, admission and discharge procedures were streamlined. Personnel, equip-

ment, and capital issues were addressed as needed. All personnel were able to track a patient's length of stay and time to initial evaluation. A "code 29" or "capacity alert" was instituted any time the 29-minute goal was threatened. This triggered early inpatient discharges and the use of "virtual" beds, expediting the admission process. Moving patients through the ER became everyone's responsibility.

The "29-minute" initiative markedly improved patient satisfaction. Ninety-eight percent of patients were seen by a physician within 29 minutes, with an average wait time of 18 minutes. The problem of patients leaving without being seen by a physician was virtually eliminated. ER volume experienced a 15% increase on a year-to-year basis. The number of hospital admissions increased by 2.5%; the number of insured patients increased as well. The result was an audited profit margin of \$35 million in 2007, just 3 years into the plan (Brook F. Bock, MD, CEO, Colorado Mountain Medical PC; Professor, Department of Emergency Medicine, Wayne State University, personal communication, October 2011).

## CONCLUSION

The ER is more than a hospital department; it has been called "a room with a view" into our healthcare system (15). In an opinion piece in the *New England Journal of Medicine*, Kellermann and Martinez noted that the quickest way to assess a community's public health and primary care systems is to spend a few hours in the local ER. Under-resourced public health will reveal patients with vaccine-preventable illnesses, smoking-related health problems, preventable injuries, and food-borne diseases. Fragmented primary care will reveal a waiting room full of patients with problems that should have been prevented or treated by primary care providers. If hospital administrators are not adept at managing patient flow, you will see rooms and hallways packed with ill and injured patients admitted hours earlier but going nowhere. Conversely, an efficiently functioning ER centered on the needs of the patient is a certain indicator of a healthy and vibrant hospital functioning at a high level in all areas (2).

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## DISCUSSION

**Zeidel, Boston:** As a chair of medicine, I am obviously very aware of what's going on in the ER, and Rich Wolfe and I are working on this a lot. It seems to me that often the ER is like a failing heart and we need to relieve the preload, the afterload, and the contractility. So, in the preload, the EMTALA, many ER physicians tell me that we are not allowed to create dispensaries adjacent to the ER where we could screen patients and then move them to a different setting. They could be seen by a doctor immediately and taken care of, and we probably need to change things to allow that. That's preload. Afterload is what you are describing: the issue of getting patients into the hospital in a timely fashion or getting the OB patients into a specialty unit, as they do in Britain. And then contractility is important because ER physicians often want to make the whole diagnosis instead of just saying "up or out" and "if up, go now." We're not going to do that CT scan; we know the patient has to be admitted. We also have the issue, of course, of waiting for consults, which is the bugbear. Since patients get admitted into the medicine



services anyway, we are actually beginning to ban neurology consults in the ER, having them done instead on the floor. Any thoughts about those points?

**Barish, Shreveport:** I like all those suggestions, and I think you're right. As you know, a number of hospital systems are considering 24-hour primary care, in which primary care centers are located adjacent to the emergency room, which is exactly what you are talking about. A patient could be triaged there and be seen by a physician at the time. We have found that patients just don't follow-up with primary care physicians. Many times, an appointment several weeks away will not be kept. The other issue is that only 40% of primary care physicians in the United States see patients after hours. In England, it's 87%, and in the Netherlands, it's 95%. Dr. Wolfe's comments were right on the mark when he suggested that we should teach patients not to get sick after 5:00 PM. So the bottom line is that primary care physicians in the United States do not seem to be seeing patients after hours, as frequently as some of our colleagues around the world.

**Sullivan, Atlanta:** First off, let me congratulate you, Dr. Barish, on a very important and very interesting contribution. I have two questions. In the system with which I am familiar — patients pile up in the emergency room because of the lack of beds available in the hospital — At the Detroit Medical Center, was this an issue, and, if so, how was it addressed? The other problem is that many hospitals are closing their emergency rooms, so the public hospital sees all the patients who have been refused by others in the system. Was this an issue in Detroit, and how was it addressed? I'd like to congratulate you on addressing a really significant issue.

**Barish, Shreveport:** Thank you. First, all academic administrators are trying to reduce the length of stay so that they can move more patients through, more rapidly, in the hospital. Many chairman of medicine are working on protocols to enhance the movement of patients from the ER to the floors. I believe everyone is trying. At LSU, our length of stay has come down by almost 20% within the past 2.5 years. That's what we need to do — to move patients through because more patients continue to come. You're right: the closure of emergency rooms is a real issue. Many hospitals are failing financially. Just recently, about 16 or 18 months ago, St. Vincent's Hospital in New York City closed. Who would have thought that? Other hospitals are turning into specialty hospitals, and thus closing their emergency rooms. So, it's a problem that's not going away. But I will say that, for some reason, the customer has spoken. This has been a problem dating back to 1955. The *New England Journal of Medicine* published an issue out of Hartford in 1955, showing that in 10 years (from 1944 to 1955), annual volumes in their emergency rooms increased from 3,000 to 18,000. Visits increased almost four-fold, even in communities with little population growth. The solution that was suggested was to wait until all the physicians came back from the war. . . wait until they all come back from the war and all these visits will decrease. It never happened. Visits just kept going up and up because of accessibility. Emergency rooms are open 168 hours a week. A busy primary care physician will probably deliver care 50 hours a week. They cannot compete. Patients are talking, the customers have spoken, and we have to deal with these issues.